UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/733,744	12/11/2003	Bruce Rising	2003P14125US	8401

7590 08/23/2004

Siemens Corporation
Intellectual Property Department
170 Wood Avenue South
Iselin, NJ 08830

EXAMINER	
RINEHART, KENNETH	

ART UNIT	PAPER NUMBER
3749	

DATE MAILED: 08/23/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)
	10/733,744	RISING, BRUCE
	Examiner	Art Unit
	Kenneth B Rinehart	3749

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *11 December 2003*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-17* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-17* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *11 December 2003* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *12/11/2003*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 1-3, 5-10, 12-17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Rising in view of Knowles. Rising discloses A combustion-based system, comprising: a combustor for burning a combustible material (3, fig. 1), wherein an exhaust gas stream output by said combustor includes NO2 and at least one metal including mercury (fig. 1, the coal contains mercury so the exhaust gas will contain mercury, col. 1, lines 50-51); at least one ultraviolet light source in optical communication with said exhaust gas stream (7, fig. 1), ultraviolet light from said light source photo-chemically dissociating at least a portion of said NO2 to form an NO2 reduced exhaust stream (fig. 1), for receiving said NO2 reduced exhaust stream (fig. 1), a fossil fuel fired power plant (col. 1, line 9, col. 1, lines 50-51), said combustible material comprises coal (col. 1, lines 50-51), said mercury in said exhaust stream is in the vapor phase (col. 1, line 27), said ultraviolet light source provides light in a wavelength range of 350 to 400 nm (col. 2, line 55), said system reduces an amount of NO2 in said exhaust gas to below 20 parts per million, said system reduces an amount of N02 in said exhaust gas to below 10 parts per million (col. 2, line 45), said system is exclusive of catalyst particles (see entire document), said light source is disposed in said exhaust gas stream (7, fig. 1), said light source is disposed remote from said exhaust stream (7, fig. 1), a optical fiber network transmits said ultraviolet light

to said exhaust stream (col. 4, line 19), irradiating an exhaust gas stream including mercury and NO2 with ultraviolet light (fig. 1), said light photo-chemically dissociating at least a portion of said NO2 to form an NO2 reduced gas stream (fig. 1), said NO2 reduced gas stream (fig. 1), said ultraviolet light is in a wavelength range of 350 to 400 nm (col. 2, line 55), said exhaust gas stream is generated by combusting coal (col. 1, line 50-51). Rising discloses applicant's invention substantially as claimed with the exception of and a sorbent containing filter media..., said filter media trapping said at least one metal, a particle collection device for trapping said sorbent, and contacting ... with a sorbent material, wherein said sorbent traps said mercury. Rising teaches and a sorbent containing filter media..., said filter media trapping said at least one metal (figure 1), a particle collection device for trapping said sorbent (7, fig. 1), and contacting ... with a sorbent material, wherein said sorbent traps said mercury (fig. 1) for the purpose of controlling the exhaust emissions. It would have been obvious to one of ordinary skill in the art to modify Rising by including and a sorbent containing filter media..., said filter media trapping said at least one metal, a particle collection device for trapping said sorbent, and contacting ... with a sorbent material, wherein said sorbent traps said mercury as taught by Knowles for the purpose of controlling the exhaust emissions so that clean air regulation can be met and the detrimental effects of exposure to mercury can be prevented.

Claims 1-17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Rising in view of Lerner. Rising discloses A combustion-based system, comprising: a combustor for burning a combustible material (3, fig. 1), wherein an exhaust gas stream output by said combustor includes NO2 and at least one metal including mercury (fig. 1, the coal contains mercury so the exhaust gas will contain mercury, col. 1, lines 50-51); at least one ultraviolet light

source in optical communication with said exhaust gas stream (7, fig. 1), ultraviolet light from said light source photo-chemically dissociating at least a portion of said NO2 to form an NO2 reduced exhaust stream (fig. 1), for receiving said NO2 reduced exhaust stream (fig. 1), a fossil fuel fired power plant (col. 1, line 9, col. 1, lines 50-51), said combustible material comprises coal (col. 1, lines 50-51), said mercury in said exhaust stream is in the vapor phase (col. 1, line 27), said ultraviolet light source provides light in a wavelength range of 350 to 400 nm (col. 2, line 55), said system reduces an amount of NO2 in said exhaust gas to below 20 parts per million, said system reduces an amount of N02 in said exhaust gas to below 10 parts per million (col. 2, line 45), said system is exclusive of catalyst particles (see entire document), said light source is disposed in said exhaust gas stream (7, fig. 1), said light source is disposed remote from said exhaust stream (7, fig. 1), a optical fiber network transmits said ultraviolet light to said exhaust stream (col. 4, line 19), irradiating an exhaust gas stream including mercury and NO2 with ultraviolet light (fig. 1), said light photo-chemically dissociating at least a portion of said NO2 to form an NO2 reduced gas stream (fig. 1), said NO2 reduced gas stream (fig. 1), said ultraviolet light is in a wavelength range of 350 to 400 nm (col. 2, line 55), said exhaust gas stream is generated by combusting coal (col. 1, line 50-51). Rising discloses applicant's invention substantially as claimed with the exception of and a sorbent containing filter media..., said filter media trapping said at least one metal, a particle collection device for trapping said sorbent, and contacting ... with a sorbent material, wherein said sorbent traps said mercury, said system comprises a waste incinerator, said sorbent media comprises activated carbon. Lerner teaches and a sorbent containing filter media..., said filter media trapping said at least one metal (abstract), a particle collection device for trapping said sorbent (26, fig. 1), and contacting ...

with a sorbent material, wherein said sorbent traps said mercury (abstract, fig. 1), said system comprises a waste incinerator (abstract), said sorbent media comprises activated carbon (col. 6, line 58) for the purpose of controlling the exhaust emissions. It would have been obvious to one of ordinary skill in the art to modify Rising by including and a sorbent containing filter media..., said filter media trapping said at least one metal, a particle collection device for trapping said sorbent, and contacting ... with a sorbent material, wherein said sorbent traps said mercury, said system comprises a waste incinerator, said sorbent media comprises activated carbon as taught by Lerner for the purpose of controlling the exhaust emissions so that clean air regulation can be met and the detrimental effects of exposure to mercury can be prevented.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kenneth B Rinehart whose telephone number is 703-308-1722. The examiner can normally be reached on 7:30 -4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ira Lazarus can be reached on 703-308-1935. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

KBR

KENNETH RINEHART
PRIMARY EXAMINER